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CONFIDENTIAL

June 13, 1967

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[Redacted]
Post Office Box 6788
Fort Davis Station
Washington, D. C. 20020

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Attention: [Redacted]
Subject: [Redacted]

Gentlemen:

Enclosed are two copies of a clarification to Page 2-2 of our Final Report for Phase I of the subject contract. This need for a clarification resulted from a conversation between your technical representative and ours on June 9, 1967.

Please see that a copy of this clarification is transmitted to the responsible technical monitor.

Very truly yours,

25X1

[Redacted]
ENCs.

Contract Administrator
Photogrammetric Contracts Section

Declass Review by NGA.

Group 1
Excluded from automatic
downgrading and
declassification

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Clarification of Page 2-2 for "Final Report, Design Analysis for Anamorphic System for High Power Stereoviewer", concerning optical performance.

25X1 It is stated that the optical performance of the anamorphic attachment is essentially diffraction limited and does not reduce the overall performance of the High Power Stereo Viewer with or without [] eyepieces and objectives. By this is meant that the anamorphic eyepiece is corrected to within the quarter wavelength Rayleigh criterion. It should cause no degradation of the high power stereoviewer image quality. There will be no observable coma and no observable color not already in the system--remembering that the eyepiece is a magnifier in one axis and will expand any existing aberrations. However, without detailed knowledge of the design of the [] objectives and eyepieces it is not possible to adequately analyze the system and prove lack of degradation. Any degradation will be minor and therefore on and off axis resolution with the anamorphic eyepiece is specified to be at least 90% of that with the [] eyepiece when using [] objectives. The test method will consist of measuring the resolution of a High Power Stereoviewer with [] objective and eyepiece, then replacing the conventional eyepiece with the anamorphic eyepiece and again reading the resolution of the system. The latter readings will be at least 90% of the former readings.

In the matter of field curvature, the field obtained with the attachment is slightly flatter than that with the unequipped High Power Stereoviewer. The anamorphic system is composed of two doublets and a field lens acting as auxiliary optics for the prism anamorphic zoom. The unit, when installed, replaces the field lens of the Stereoviewer. The prism zoom system contributes no field curvature. The doublets, however, do have field curvature contributions inversely proportional to their average glass index and focal length. Since the indices are the same and the focal lengths are about equal but of opposite sign, then two field curvature contributions cancel each other out. The only field curvature contribution that remains in the anamorphic attachment is that of its field lens. This field lens has a longer focal length than the one it replaces in the Stereoviewer and therefore its field curvature contribution is smaller. The net result is that when the field lens of the Stereoviewer is replaced by the anamorphic attachment, the system field curvature is somewhat less.